Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at http://about.jstor.org/participate-jstor/individuals/early-journal-content.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

LETTERS TO THE EDITOR.

[*Correspondents are requested to be as brief as possible. The writer's name is in all cases required as proof of good faith.*]

United States geologists, sandstones, and the Keweenawan series.

HAVING objected to certain current views in geology and lithology, especially those of one of the preceeding U. S. geological surveys, it is with great pleasure I observe that some of the officers of the present U. S. geological survey, in recent publications, take concordant grounds, in several points, with those published by myself between 1877 and the summer of 1880. These are: 1°. The necessity for the essential union of field and microscopic work, the former to dominate in points relating to the origin of rocks, from the inability of the latter to do what it was claimed it could; and as a reaction against the present too exclusive sedimentary theories; 2°. That propylite has no existence as a rock species, but is an altered state of other rocks (principally andesite), its erection into a distinct species being due to erroneous microscopic and other observations; 3°. That the conglomerate beds of Keweenaw Point are formed in the main from the *débris* of granitic and old rhyolitic and trachytic rocks (the basaltic *débris* is subordinate).

Apropos of Mr. G. P. Merrill's letter in SCIENCE, No. 8, it is proper to state, that, since sandstones are detrital rocks, the minerals contained in them would of necessity have the same inclusions as they had in the rocks from whose detritus the sandstones are formed; and that it has long been known to lithologists, and fully published in the past, that the quartz of sandstones contains fluid inclusions (both with and without moving bubbles), glass inclusions, trichites, etc.

Owing to some remarks in the same number, it is necessary to add somewhat to my previous letter upon Keweenaw Point geology. The evidence advanced by Logan, which Dr. Hunt finds so convincing, was mainly a difference in dip between the traps and sandstones when several miles apart; and all the evidences, as Logan says, only "seem to support the suspicion that the sandstones may overlie unconformably those rocks, which, associated with the trap, constituted the copper-bearing series." The 'Keweenawan series' was first founded on observations on Keweenaw Point; and it, of course, is to live or die there. The observations mentioned in my previous letter are clear, definite, and positive, and substantiate the views of Whitney, Selwyn, and Winchell. They include and explain those of the Michigan and Wisconsin geologists on which the series was based; and, until they are disproved, they definitely show that the Keweenawan series has no separate existence, but overlies, and is continuous with, the eastern sandstone. Dr. Hunt's argument is based on the dictum that the traps underlie the eastern sandstone; and hence his argument is void. Over two years ago the attention of Messrs. Selwyn, Hunt, Irving, and Winchell was called to my observations; and, until they disprove them, it is difficult to see why they should ignore them, and enter upon an interminable theoretical discussion regarding a series which those observations showed did not exist.

Cambridge, Mass., April 3, 1883. M. E. WADSWORTH.

The Ainos of Japan.

A note in SCIENCE of March 30, on the Ainos of Japan, seems to call for a word of comment. A residence of four years in the Island of Yesso, in the capacity of a government official, threw me in almost daily contact with the Ainos, and presented opportunities for studying this most interesting people, which enable me to speak with some degree of assurance concerning them.

That the Ainos of Japan have no race affinities with the Japanese is not to be denied: in fact, all authorities upon the subject, especially those who have studied the people in their own home, are unanimous upon this point. It would seem, however, that, with regard to the Aino population, there is a diversity of opinion, which makes glaring discrepancies in the records given. Having personal acquaintance with some of the authorities which Dr. Brauns cites, — i.e., the missionaries of Hakodate, — and having had abundant opportunity to verify the government statistics by inspection of Aino settlements in various parts of the island, I cannot but feel justified in the statement that the figures given by Dr. Brauns, and so often stated at random by others, are far too large. Statistics compiled for me from the government records show the following population, by provinces: —

PROVINCE.	Male.	Female.
Chisuma	237	223
Hitaka	2,561	2,709
Iburi	1,889	1,837
Ishicari	532	526
Kitami	635	614
Kushiro	732	717
Nemuro	229	244
Oshima	125	120
Shiribeshi	450	407
Teshiwo	186	166
Tokachi	740	758
Totals	8,316	8,321
Grand Total	-	16,637

The province of Chisuma includes all of the Kurile Islands, while the other provinces are embraced in the Island of Yesso. Of the 1,058 Ainos in the province of Ishicari, 750 were brought from Saghalien when that island was ceded to Russia in exchange for the Kuriles, about the year 1876, and are those spoken of by Mr. Brauns as found near Sapporo. With regard to the number of Ainos found on the Asiatic continent, no reliable statistics are to be found; but it is probably large.

The tribute which Mr. Brauns pays to the Aino character is certainly worthy of indorsement; and it would be a pleasure to add to what he says, were it not that want of space forbids, and that these facts will shortly appear in a more permanent form, as they are embodied in a book now nearly ready for the publisher. It only remains to add, that, while the figures given are undoubtedly very near the true population of the various Aino settlements, they cannot be taken as more than closely approximate.

D. P. PENHALLOW.

Houghton Farm, Mountainville, N.Y., April 2, 1883.

PREHISTORIC TREPHINING.

On prehistoric trephining and cranial amulets. By ROBERT FLETCHER, M.R.C.S. Eng., Act. asst. surg. U. S. army. Washington, *Government printing-office*, 1882. 32 p., 9 pl, cuts. 4°.

THIS brochure, which is a part of vol. v. of the Contributions to North-American ethnol-

ogy, gives in a very compact form the facts obtained in regard to the practice of trephining among prehistoric races.

The first communication on the subject was made by Broca in 1877. His attention was directed to certain crania, belonging to the age of polished stone, presenting curious losses of substance not to be explained by the action of weathering. What, then, was the cause of this, and what its object? Pathological anatomy and experiment might answer the first of these questions quite conclusively, while the second lies within the realm of speculation only.

The skulls in question usually had holes in them, the edges of which were partly sharp, rough, and irregular, and partly smooth, eburnated, and slightly bevelled. In a few the latter condition alone was present. The smoothed edges were evidently the result of cicatrization, the diploetic portion having been replaced by a compact, bony structure, thus giving the ivory-like character. Such a process could only have taken place during the life of the individual. Congenital deformity, disease, or injury were the causes which could have given rise to a loss of substance of this sort. The first two are easily excluded for reasons which would at once be accepted as valid by those who have studied the changes produced in bones under such circumstances. An injury, then, remains to account for this; and such can be accidental or intentional. Of the former sort those received in battle are the most common; and had the people of the neolithic time been armed with sharp, cutting weapons, the occurrence of these wounds might have been referable to them. A calvaria in the Musée Broca exhibits a somewhat similar condition, a slice having been removed by the blow of a Tartar sabre. But the weapons of this people were chiefly axes or hammers, which would produce depressed fractures, usually accompanied by a greater destruction of the inner than the outer table of the skull, — the opposite of what had taken place here, as shown by the bevelling.

The theory which explains the condition best is, that a portion of the skull had been removed by scraping or drilling through it. This would naturally give an oblong hole with a bevelled margin. The bone in the immediate neighborhood being healthy, and all signs of re-active inflammation having passed away, it is probable that the operation must have been done long before the death of the individual, and presumably in childhood. Broca demonstrated that a child's skull could be easily scraped through in a few minutes, with the aid of a piece of flint, and that an adult's could be perforated in an hour. A puppy was also experimented upon in the same way by him; and it was found that the operation was well borne, and the animal made a good recovery. In man this rude method of trephining is not necessarily fatal, as there are savage tribes in the South Seas and in Algeria which practise the operation in precisely the same way, with a good percentage of recovery.

This being accepted as the cause, what can have been the object of the operation? Among civilized people the operation is performed to remove diseased or depressed pieces of bone giving rise to symptoms of compression. M. Parrot has exhibited one skull which he thinks shows such was the case. There is no doubt of the evidence of disease; but it does not seem to be clearly shown that this may not have arisen subsequently to the trephining, and entirely independent of it. Among the savage tribes already referred to, the relief of epilepsy is assigned as the reason for the operation; and this is a plausible explanation of its use among prehistoric races.

It will be remembered, that, in the greater number of trephined skulls, the edges of the opening were partly rough and jagged. Such were evidently made after death, as there is no evidence of any attempt at repair; and it is conjectured that pieces of bone were then broken away so as to include a portion of the original cicatrized margin, and that these were subsequently worn as 'amulets.' This is called post-mortem trephining.

The western hemisphere has thus far furnished but one case of trephining among prehistoric people. It was discovered by Squier in an ancient Peruvian. A square piece of bone had been removed, apparently by cutting, and the patient, an adult, had survived but a short time, — fifteen days, according to Nelaton.

The thanks of American investigators are due to Dr. Fletcher for placing within their reach such a well-illustrated *résumé;* and its careful perusal will certainly repay those interested in the subject.

REPORT OF THE PEABODY MUSEUM.

Fifteenth annual report of the trustees of the Peabody museum of American archaeology and ethnology. Vol. iii, no. 2. Cambridge, 1882. [106] p. 44 fig. 8°.

THIS report is chiefly devoted to notes by the curator upon the copper objects from North